

**AMENDMENTS TO THE CLAIMS**

1. (Currently amended) A flow homogenizer for insertion in a pipeline conveying a particulate material carried by a carrier fluid comprising a pipe having an inlet end and an outlet end and including a core defined by two or more core pipe sections having a common longitudinal axis and arranged in pairs comprising respective upstream and downstream core pipe sections lying adjacent to one another in a fixed spatial arrangement and connected in series between the inlet end and the outlet end, each pair of upstream and downstream core pipe sections defining an upstream inlet and a downstream outlet, each of the upstream inlet and downstream outlet having fixed cross-sectional areas, the upstream and downstream core pipe sections in each pair defining different relatively gradual or relatively rapid changes in cross-sectional area wherein the upstream core pipe section defines an angle of less than 40 degrees to its longitudinal axis and the downstream core pipe section defines an angle of greater than 40 degrees to its longitudinal axis in order to mix particulate material and carrier fluid entering the inlet end to form a homogeneous mixture on exit from the outlet end, and the cross-sectional area of each upstream core pipe section increasing from an inlet cross-sectional area at an upstream end thereof to a relatively larger cross-sectional area at a downstream end thereof and the cross-sectional area of each downstream core pipe section decreasing from a relatively larger cross-sectional area at the upstream end thereof to a relatively smaller cross-sectional area at the outlet end thereof.

2.-22. (Cancelled)

23. (Previously Presented) A homogenizer according to Claim 1 wherein the cross-sectional areas of the inlet and outlet ends are equal.

24. (Previously Presented) A flow homogenizer according to Claim 1 wherein each upstream core pipe section defines a relatively gradual increase in cross-sectional area from the inlet cross-sectional area to a maximum cross-sectional area at the downstream end thereof and each downstream core pipe section defines a relatively rapid decrease in cross-sectional area from the maximum cross-sectional area to an outlet cross-sectional area at a downstream end thereof.

25. (Cancelled)

26. (Previously Presented) A flow homogenizer according to Claim 1 each upstream core pipe section defines a relatively gradual increase in cross-sectional area from the inlet cross-sectional area to a maximum cross-sectional area at the downstream end thereof and each downstream core pipe section defines a relatively rapid decrease in cross-sectional area from the maximum cross-sectional area to an outlet cross-sectional area at a downstream end thereof, the length of the upstream core pipe section being 1.5 times the diameter of the core at the inlet end and the diameter of the core at the junction between the upstream and downstream core pipe

sections being 1.3 times the diameter of the core at the inlet end.

27.-28. (Cancelled)

29. (Previously Presented) A flow homogenizer according to Claim 1 wherein each upstream pipe section defines a relatively rapid increase in cross-sectional area from the inlet cross-sectional area to a maximum cross-sectional area at the downstream end thereof and the each downstream core pipe section defines a relatively gradual decrease in cross-sectional area from the maximum cross-sectional area to an outlet cross-sectional area at a downstream end thereof.

30. (Previously Presented) A flow homogenizer according to Claim 1 wherein the core is defined by four core pipe sections and a middle section the four core pipe sections being arranged in two pairs, each first and second pair comprising respective upstream and downstream core pipe sections, the first pair of core pipe sections being connected in series between the inlet end and the middle section, and the second pair of core pipe sections being connected in series between the middle section and the outlet end, the upstream core pipe section of the first pair of core pipe sections defining a gradual increase in cross-sectional area from the inlet cross-sectional area to a first maximum cross-sectional area at a downstream end thereof, the downstream core pipe section of the first pair of core pipe sections defining a relatively rapid decrease in cross-sectional area from the first maximum cross-sectional area to a middle cross-

sectional area, the upstream core pipe section of the second pair of core pipe sections defining a relatively gradual increase in cross-sectional area from the middle cross-sectional area to a second maximum cross-sectional area at the downstream end thereof and the downstream core pipe section of the second pair of core pipe sections defining a relatively rapid decrease in cross-sectional area from the second maximum cross-sectional area to an outlet cross-sectional area at the downstream end thereof.

31. (Currently Amended) A flow homogenizer for insertion in a pipeline conveying a particulate material carried by a carrier fluid comprising a pipe having an inlet end and an outlet end and including a core defined by two or more core pipe sections having a common longitudinal axis and arranged in pairs comprising respective upstream and downstream core pipe sections lying adjacent to one another in a fixed spatial arrangement and connected in series between the inlet end and the outlet end, each pair of upstream and downstream core pipe sections defining an upstream inlet and a downstream outlet, each of upstream inlet and the downstream outlet having fixed cross-sectional areas, the upstream and the downstream core pipe sections in each pair defining different relatively gradual or rapid changes in cross-sectional area wherein the upstream core pipe section defines an angle of less than 40 degrees to its longitudinal axis and the downstream core pipe section defines an angle of greater than 40 degrees to its longitudinal axis in order to mix particulate material and carrier fluid entering the inlet end to form a homogeneous mixture on exit from the outlet end, and the cross-sectional area of each upstream core pipe section increasing from an inlet fixed cross-sectional area at an upstream end

thereof to a relatively larger fixed cross-sectional area at a downstream end thereof and the cross-sectional area of each downstream core pipe section decreasing from a relatively larger cross-sectional area at the upstream end thereof to a relatively smaller cross-sectional area at the outlet end thereof, the flow homogenizer further including a flow control system located at the inlet end.

32. (Currently Amended) A flow homogenizer for insertion in a pipeline conveying a particulate material carried by a carrier fluid comprising a pipe having an inlet end and an outlet end and including a core defined by two or more core pipe sections having a common longitudinal axis and arranged in pairs comprising respective upstream and downstream core pipe sections lying adjacent to one another in a fixed spatial arrangement and connected in series between the inlet end and the outlet end, each pair of upstream and downstream core pipe sections defining an upstream inlet and a downstream outlet, each of upstream inlet and the downstream outlet having fixed cross-sectional areas, the upstream and the downstream core pipe sections in each pair defining different relatively gradual or rapid changes in cross-sectional area wherein the upstream core pipe section defines an angle of less than 40 degrees to its longitudinal axis and the downstream core pipe section defines an angle of greater than 40 degrees to its longitudinal axis in order to mix particulate material and carrier fluid entering the inlet end to form a homogeneous mixture on exit from the outlet end, and the cross-sectional area of each upstream core pipe section increasing from an inlet fixed cross-sectional area at an upstream end thereof to a relatively larger fixed cross-sectional area at a downstream end thereof and the cross-

sectional area of each downstream core pipe section decreasing from a relatively larger cross-sectional area at the upstream end thereof to a relatively smaller cross-sectional area at the outlet end thereof, the flow homogenizer further including a flow control system located at the outlet end.

33. (Previously Presented) A flow homogenizer according to Claim 31 wherein the flow control system includes at least one wedge-shaped ramp on an inner surface of the pipe.

34. (Previously Presented) A flow homogenizer according to Claim 32 wherein the flow control system includes at least one wedge-shaped ramp on an inner surface of the pipe.

35. (Previously Presented) A flow homogenizer according to Claim 31 wherein the flow control system includes a plurality of wedge-shaped ramps spaced about the inner circumference of the inner surface of the pipe.

36. (Previously Presented) A flow homogenizer according to Claim 32 wherein the flow control system includes a plurality of wedge-shaped ramps spaced about the inner circumference of the inner surface of the pipe.

37. (Previously Presented) A flow homogenizer according to Claim 31 wherein the flow control system includes at least one aerofoil on an inner surface of the pipe.

38. (Previously Presented) A flow homogenizer according to Claim 32 wherein the flow control system includes at least one aerofoil on an inner surface of the pipe.

39. (Previously Presented) A flow homogenizer according to Claim 31 wherein the flow control system includes a plurality of aerofoils spaced about the inner circumference of the inner surface of the pipe.

40. (Previously Presented) A flow homogenizer according to Claim 32 wherein the flow control system includes a plurality of aerofoils spaced about the inner circumference of the inner surface of the pipe.

41. (Previously Presented) A flow homogenizer according to Claim 31 wherein the inner surface of the input pipe section is shaped to define a flow control system in the form of a tapered throat.

42. (Previously Presented) A flow homogenizer according to Claim 32 wherein the inner surface of the input pipe section is shaped to define a flow control system in the form of a tapered throat.

43. (Previously Presented) A flow homogenizer according to Claim 31 wherein the

flow control system includes a combination of one or more wedge-shaped ramps, one or more aerofoils and/or a tapered throat.

44. (Previously Presented) A flow homogenizer according to Claim 32 wherein the flow control system includes a combination of one or more wedge-shaped ramps, one or more aerofoils and/or a tapered throat.

45. (Previously Presented) A flow homogenizer according to Claim 1 further including one or more air jets at the inlet end.

46. (Previously Presented) A flow homogenizer according to Claim 31 further including one or more air jets at the inlet end.

47. (Previously Presented) A flow homogenizer according to Claim 32 further including one or more air jets at the inlet end.

48. (Previously Presented) A flow homogenizer according to Claim 1 further including one or more air jets at the outlet end.

49. (Previously Presented) A flow homogenizer according to Claim 31 further including one or more air jets at the outlet end.

50. (Previously Presented) A flow homogenizer according to Claim 32 further including one or more air jets at the outlet end.

51. (New Claim) A flow homogenizer according to Claim 1 wherein the angle defined by the upstream section relative to its longitudinal axis is approximately 6 degrees.

52. (New Claim) A flow homogenizer according to Claim 1 wherein the angle defined by the downstream section relative to its longitudinal axis is approximately 45 degrees.

53. (New Claim) A flow homogenizer according to Claim 52 and wherein the angle defined by the upstream section relative to its longitudinal axis is approximately 6 degrees.

54. (New Claim) A flow homogenizer according to Claim 31 and wherein the angle defined by the upstream section relative to its longitudinal axis is approximately 6 degrees.

55. (New Claim) A flow homogenizer according to Claim 31 and wherein the angle defined by the downstream section relative to its longitudinal axis is approximately 45 degrees.

56. (New Claim) A flow homogenizer according to Claim 55 and wherein the angle defined by the upstream section relative to its longitudinal axis is approximately 6 degrees.

57. (New Claim) A flow homogenizer according to Claim 32 and wherein the angle defined by the upstream section relative to its longitudinal axis is approximately 6 degrees.

58. (New Claim) A flow homogenizer according to Claim 32 and wherein the angle defined by the downstream section relative to its longitudinal axis is approximately 45 degrees.

59. (New Claim) A flow homogenizer according to Claim 58 and wherein the angle defined by the upstream section relative to its longitudinal axis is approximately 6 degrees.